CLAIMS:

1. An evaporative cooler having a housing adapted to be installed within the roof space of a pitched roof, said housing having an air inlet associated with one or more evaporative pads defining an air-permeable cooling means, means for supplying water to the or each pad, and a fan for drawing external air into the housing via the air-permeable cooling means and for discharging the air thereby cooled via an outlet, wherein the housing is so configured that the air-permeable cooling means is closely adjacent the external surface of the pitched roof.

2. An evaporative cooler having a housing adapted to be installed within the roof space of a pitched roof, said housing having an air inlet associated with one or more evaporative pads defining an air-permeable cooling means, means for supplying water to the or each pad, and a fan for drawing external air into the housing via the air-permeable cooling means and for discharging the air thereby cooled via an outlet, wherein the housing is so configured that when the unit is installed there is no substantial projection of the air-permeable cooling means beyond the external surface of the pitched roof.

3. An evaporative cooler having a housing adapted for installation substantially within the roof space of a pitched roof, said housing having an inlet adapted to lie at or adjacent to the plane of the roof, one or more evaporative pads mounted to the inlet, the or each pad defining an air-permeable cooling means, means for supplying water to the or each pad, and a fan for drawing external air into the housing via the air-permeable cooling means and for discharging the air thereby cooled via an outlet.

4. An evaporative cooler installation mounted within the roof space of a pitched roof of a building, said installation including an evaporative cooler having a cooler housing mounted between rafters of the pitched roof, said housing being substantially wholly within the roof space and carrying a fan for drawing external air into the housing via one or more evaporative pads defining an air-permeable cooling means and for discharging the air thereby cooled via an outlet from the housing, and said housing also carrying a water

reservoir and a pump for feeding water from the reservoir to the or each pad and forming means for supplying water to the or each pad, whereby said fan, water reservoir, and pump are also within the roof space, wherein the housing mounts the air-permeable cooling means adjacent the external surface of the pitched roof.

5. An evaporative cooler installation mounted within the roof space of a pitched roof of a building, said installation including an evaporative cooler having a cooler housing mounted between rafters of the pitched roof, said housing being substantially wholly within the roof space and carrying a fan for drawing external air into the housing via one or more evaporative pads defining an air-permeable cooling means and for discharging the air thereby cooled via an outlet from the housing, and said housing also carrying a water reservoir and a pump for feeding water from the reservoir to the or each pad and forming means for supplying water to the or each pad, wherein the housing mounts the air-permeable cooling means such that there is no substantial unsightly projection of the air-permeable cooling means beyond the external surface of the roof.

6. A cooler according to any one of claims 1 to 3, wherein the means for supplying water to the air-permeable cooling means comprises a reservoir at the base of the housing, and the base of the housing is so configured that surplus water discharged from the or each pad into the interior of the housing is directed into the reservoir for re-use.

7. An evaporative cooler according to any one of claims 1 to 6, wherein the air-permeable cooling means formed by the or each pad is substantially planar in form.

8. An evaporative cooler according to the claim 7, wherein the air-permeable cooling means lies in or substantially parallel to the plane of the roof.

9. An evaporative cooler according to claim 7, wherein the air-permeable cooling means is inclined to the plane of the roof.

10. An evaporative cooler according to any one of claims 7 to 9, wherein the water

supply means includes spray and/or drip emitters configured to discharge water onto an upper outwardly-facing surface of the or each pad defining the air-permeable cooling means.

11. An evaporative cooler according to any one of claims 1 to 6, wherein the pads defining the air-permeable cooling means are arranged in an angular array one inclined relative to another.

12. An evaporative cooler according to claim 11, wherein the pads are inclined in a relatively upright manner such that water supplied by the water supply means to an upper edge of each pad will flow downwardly through the pad in the length direction thereof.

13. An evaporative cooler according to claim 12, wherein the inclined pads lie substantially wholly within the interior of the housing.

14. An evaporative cooler according to any one of claims 1 to 12, wherein the housing includes flashing for cooperation with the roof.

15. An evaporative cooler according to claim 14, wherein the flashing is integrally formed with the housing.

16. An evaporative cooler according to claim 14 or claim 15, wherein the flashing includes a rain water diverter for diverting water flowing down the roof from above the cooler to substantially prevent such flowing water from flowing into the interior of the housing via the air-permeable cooling means.

17. An evaporative cooler according to any one of claims 1 to 16 having within the interior of the housing means for removing water droplets which may be entrained within the flow of cooled air.

18. An evaporative cooler according to claim 17, wherein the droplet removal means

comprises an array of vanes positioned within the flow path of the cooled air.

19. An evaporative cooler according to claim 17, wherein the droplet removal means comprises an air-permeable pad positioned within the flow path of the cooled air.

20. An evaporative cooler according to any one of claims 1 to 19, wherein the air-permeable cooling means is mounted to an upper part of the housing, said upper housing part being movable prior to installation of the cooler relative to a lower housing part which includes the outlet, the movement between the upper housing part and lower housing part enabling the housing to be adjusted to suit the pitch of the roof into which the cooler is being installed.

21. An evaporative cooler according to claim 20, wherein the upper housing part is pivotally attached to the lower housing part to enable the upper housing part to be swung relative to the lower housing part to adjust the angle of inclination of the upper housing part to suit the pitch of the roof.

22. An evaporative cooler according to claim 20 or 21, wherein the upper and lower housing parts have walls which lie in overlapping relationship throughout the range of movement of the upper housing part relative to the lower housing part.

23. An evaporative cooler according to claim 20, wherein the upper housing part is sealed relative to the lower housing part by flexible sheet material which permits the relative movement between the housing parts.

24. An evaporative cooler according to claim 23, wherein the flexible sheet material is of concertina like form.

25. An evaporative cooler according to any one of claims 1 to 24, wherein the housing carries above the air-permeable cooling means a grid structure to prevent a person on the roof from stepping onto the air-permeable cooling means and falling into the interior of the

housing.

26. An evaporative cooler installation comprising a cooler housing mounted within the roof space of a pitched roof with the housing inlet, which mounts evaporative cooling pads, lying at or adjacent to the plane of the roof.